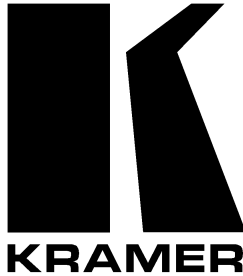


Kramer Electronics, Ltd.



USER MANUAL

Models:

VP-200N, 1:2 High Resolution XGA DA

VP-300N, 1:3 High Resolution XGA DA

VP-400N, 1:4 High Resolution XGA DA

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1 Introduction

Dedication by Kramer Electronics since 1981, to the development and manufacture of high quality video/audio equipment, makes the Kramer line an integral part of the finest production and presentation facilities in the world. In recent years, Kramer has redesigned and upgraded most of the line, making the best even better! The Kramer line of professional video/audio electronics is one of the most versatile and complete available, and is a true leader in terms of quality, workmanship, price/performance ratio and innovation. In addition to our high quality distribution amplifiers, like the **VP-200N**, **VP-300N**, and **VP-400N**, we also offer excellent switchers and matrices, remote controllers, processors, interfaces and computer-related products.

Congratulations on purchasing your Kramer TOOLS **VP-200N**, **VP-300N**, and/or **VP-400N**, which are ideal for:

- Multi monitor applications or presentation systems requiring local monitors and large screen display devices such as a projector
- Rental and staging systems
- Schools, churches, corporate applications

The package includes the following items:

- **VP-200N** *1:2 High Resolution XGA DA*, or **VP-300N** *1:3 High Resolution XGA DA*, or **VP-400N** *1:4 High Resolution XGA DA*
- Power adapter (12V DC Input)
- This user manual¹
- Kramer concise product catalog/CD

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution cables²

¹ Download up-to-date Kramer user manuals from the Internet at this URL: <http://www.kramerelectronics.com/manuals.html>

² The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com> (click "Cables and Connectors" in the Products section)

3 Overview

The Kramer **VP-200N**, **VP-300N** and **VP-400N** are high performance 1:2, 1:3 and 1:4 distribution amplifiers for XGA and higher resolution signals. They are upgrades of the best-selling **VP-200**, **VP-300** and **VP-400** machines, with larger bandwidth and DC coupling throughout, for best linearity.

The **VP-200N**, **VP-300N** and **VP-400N**:

- Accept one input, provide correct buffering and isolation, and then distribute the signal to 2, 3 or 4 identical outputs on high-density 15 pin HD connectors
- Have video bandwidth exceeding 400MHz, ensuring that the machines remain transparent even at high-resolution graphics modes such as UXGA (1600x1200)
- Accept analog or digital syncs¹ and provide ID Bit control²

Achieving the best performance means:

- Connecting only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances and positioning your **VP-200N**, **VP-300N** and/or **VP-400N** in a location free from moisture and away from excessive sunlight and dust

4 Your High Resolution XGA DA

This section describes each *High Resolution XGA DA*, as follows:

- **VP-200N** (see section 4.1)
- **VP-300N** (see section 4.2)
- **VP-400N** (see section 4.3)

The underside of the *High Resolution XGA DA* is identical on the **VP-200N**, **VP-300N**, and **VP-400N** (see section 4.4).

4.1 Your VP-200N High Resolution XGA DA

Figure 1 and Table 1 define the **VP-200 1:2 High Resolution XGA DA** unit:

1 Via a pair of underside switches. Note that both the Hs (horizontal sync) switch and the Vs (vertical sync) switch MUST be set identically

2 Via an underside switch. Sometimes notebook computers refuse to output a VGA signal to an external VGA monitor. By setting the ID BIT to ON, the notebook will output to an external VGA monitor

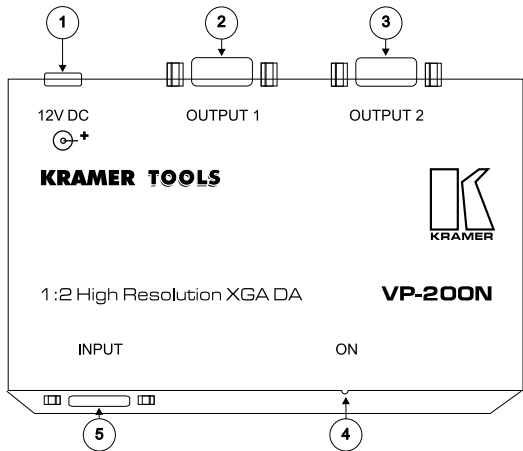


Figure 1: VP-200N 1:2 High Resolution XGA DA

Table 1: Features and Functions of the VP-200N 1:2 High Resolution XGA DA

#	Feature	Function
1	12V DC	+12V DC connector for powering the unit
2	OUTPUT 1 HD15F Connector	Connect to the XGA acceptor 1
3	OUTPUT 2 HD15F Connector	Connect to the XGA acceptor 2
4	ON LED	Illuminates when receiving power
5	INPUT HD15F Connector	Connect to the XGA source

4.2 Your VP-300N High Resolution XGA DA

Figure 2 and Table 2 define the **VP-300 1:3 High Resolution XGA DA** unit:

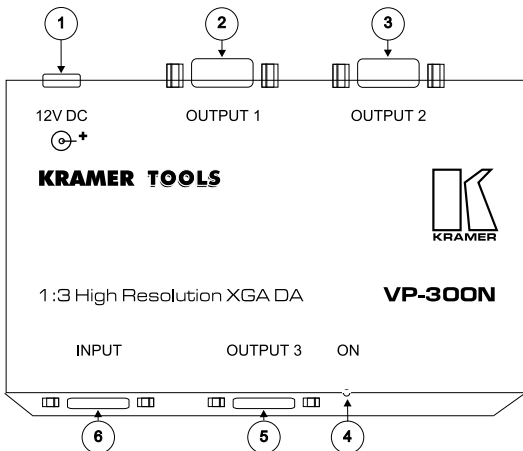


Figure 2: VP-300N 1:3 High Resolution XGA DA

Table 2: Features and Functions of the VP-300N 1:3 High Resolution XGA DA

#	Feature	Function
1	12V DC	+12V DC connector for powering the unit
2	OUTPUT 1 HD15F Connector	Connect to the XGA acceptor 1
3	OUTPUT 2 HD15F Connector	Connect to the XGA acceptor 2
4	ON LED	Illuminates when receiving power
5	OUTPUT 3 HD15F Connector	Connect to the XGA acceptor 3
6	INPUT HD15F Connector	Connect to the XGA source

4.3 Your VP-400N High Resolution XGA DA

Figure 3 and Table 3 define the **VP-400** 1:4 High Resolution XGA DA unit:

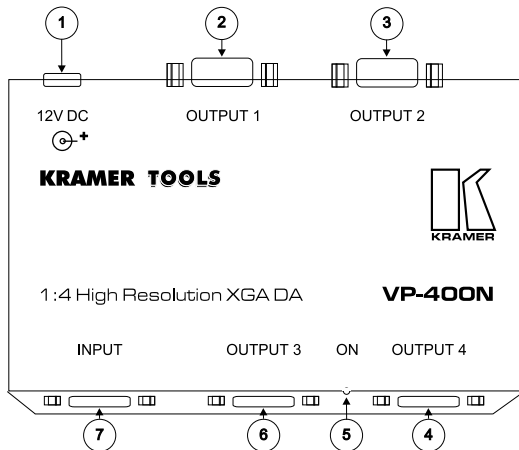


Figure 3: VP-400N 1:4 High Resolution XGA DA

Table 3: Features and Functions of the VP-400N 1:4 High Resolution XGA DA

#	Feature	Function
1	12V DC	+12V DC connector for powering the unit
2	OUTPUT 1 HD15F Connector	Connect to the XGA acceptor 1
3	OUTPUT 2 HD15F Connector	Connect to the XGA acceptor 2
4	OUTPUT 4 HD15F Connector	Connect to the XGA acceptor 4
5	ON LED	Illuminates when receiving power
6	OUTPUT 3 HD15F Connector	Connect to the XGA acceptor 3
7	INPUT HD15F Connector	Connect to the XGA source

4.4 Your High Resolution XGA DA Underside

Figure 4 and Table 4 define the switches on the underside of the **VP-200N**, **VP-300N**, and **VP-400N**:

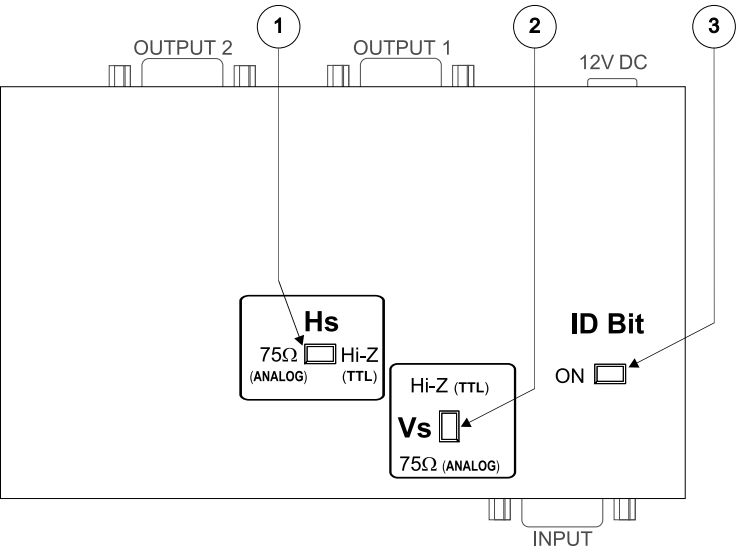


Figure 4: High Resolution XGA DA Underside

Table 4: High Resolution XGA DA Underside Features

#	Feature	Function
1	Hs (Horizontal Sync) Switch	Set both switches ¹ to Hi-Z (TTL ²) if the source is, for example, a digital graphics card. Set both switches to 75Ω (ANALOG) if the source is analog based, for example, an RGBHV source with coaxial cable for sync
2	Vs (Vertical Sync) Switch	
3	ID Bit Switch	Slide to the left to set to ON ³ ; to the right to set to OFF ⁴

5 Using Your High Resolution XGA DA

You can use any *High Resolution XGA DA*—the **VP-200N**, the **VP-300N**, and/or the **VP-400N**—to output the XGA signal from a laptop or a PC.

1 Both the Hs and the Vs switches MUST be set identically (no harm will occur to the graphics source if the switches are set to the wrong direction)

2 “Transistor-Transistor Logic” is a term used in digital electronics describing the ability of a device or circuit to be connected directly to the input or output of digital equipment. Such compatibility eliminates the need for interfacing circuitry

3 Enabling the notebook or laptop to output a VGA signal to an external VGA monitor

4 When the source is not a laptop (for example, a PC)

To output the XGA signal from a laptop's digital graphics card to 2 monitors, using a **VP-200N**, as the example in Figure 5 illustrates, do the following:

1. Connect a XGA source (for example, a laptop's digital graphics card) to the INPUT HD15F connector.
2. Connect the OUTPUT HD15F connectors to up to 2 acceptors, as follows:
 - Connect the OUTPUT 1 connector to an acceptor (for example, Monitor 1)
 - Connect the OUTPUT 2 connector to an acceptor (for example, Monitor 2)
3. On the underside of the **VP-200N**:
 - Set both the Hs and Vs switches to Hi-Z (TTL)
 - Slide the ID Bit switch to the left to set to ON
4. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.

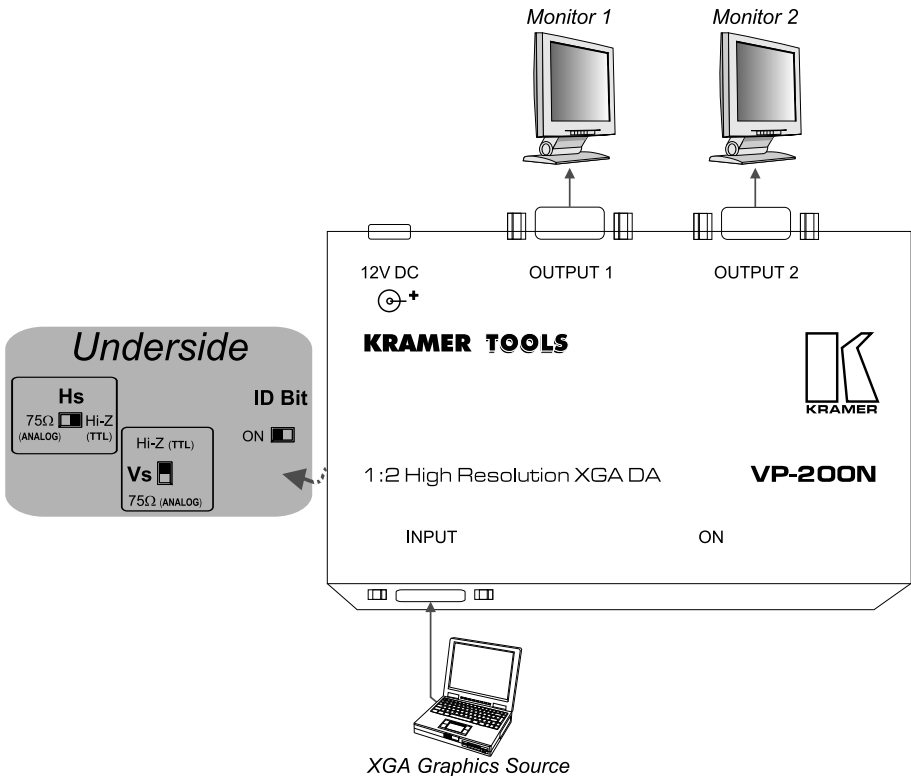


Figure 5: Connecting the VP-200N to 2 Monitors

6 Technical Specifications

Table 5 includes the technical specifications:

Table 5: Technical Specifications¹ of the High Resolution XGA DA

INPUT:	VP-200N / VP-300N / VP-400N: 1 analog red, green, blue signals - 0.7 Vpp/75Ω, H & V sync, TTL level, on an HD15F connector
OUTPUTS:	VP-200N: 2 analog red, green, blue signals - 0.7 Vpp/75Ω, H & V sync, TTL level, on HD15F connectors VP-300N: 3 analog red, green, blue signals - 0.7 Vpp/75Ω, H & V sync, TTL level, on HD15F connectors VP-400N: 4 analog red, green, blue signals - 0.7 Vpp/75Ω, H & V sync, TTL level, on HD15F connectors
MAX. OUTPUT LEVEL:	1.8 Vpp
BANDWIDTH (-3dB):	>400 MHz
DIFF. GAIN:	0.03%
DIFF. PHASE:	0.07 Deg.
K-FACTOR:	<0.05%
S/N RATIO:	72dB
CONTROLS:	Pair of switches for Hs (Horizontal Sync) and Vs (Vertical Sync) on the underside; ID Bit switch on the underside
COUPLING:	DC
POWER SOURCE:	12 VDC, 95.5mA
DIMENSIONS:	12cm x 7.5cm x 2.5cm (4.7" x 2.95" x 0.98"), W, D, H
WEIGHT:	0.3 kg. (0.67 lbs.) approx.
ACCESSORIES:	Power supply, mounting bracket
OPTIONS:	19" rack adapters RK-T1, RK-T3

¹ Specifications are subject to change without notice

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for three years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
 - i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
 - ii) Product modification, or failure to follow instructions supplied with the product
 - iii) Repair or attempted repair by anyone not authorized by Kramer
 - iv) Any shipment of the product (claims must be presented to the carrier)
 - v) Removal or installation of the product
 - vi) Any other cause, which does not relate to a product defect
 - vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult you authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.

This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC); generic emission standard. Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard. Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC Rules and Regulations: Part 15: "Radio frequency devices Subpart B – Unintentional radiators"

CAUTION!

- ☒ Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- ☒ Use the supplied DC power supply to feed power to the machine.
- ☒ Please use recommended interconnection cables to connect the machine to other components.



For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com.

**Updates to this user manual may be found at
<http://www.kramerelectronics.com/manuals.html>.**

We welcome your questions, comments and feedback.



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